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EXAMINER

CHIN, GARY

ART UNIT

PAPER NUMBER

3661

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,429

Applicant(s)

LEVINE, SEYMOUR

Examiner

Gary Chin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) 20-23, 40-48 and 50-63 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19, 24-39 and 49 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

Reissue Applications

1. The reissue oath/declaration filed with this application is defective (see 37 CFR 1.175 and MPEP § 1414) because of the following:

The oath/declaration as filed has failed to specifically indicate as to which claim or claims have the alleged defect.

2. Claims 1-63 are rejected as being based upon a defective reissue oath/declaration under 35 U.S.C. 251 as set forth above. See 37 CFR 1.175.

The nature of the defect(s) in the oath/declaration is set forth in the discussion above in this Office action.

3. The original patent, or a statement as to loss or inaccessibility of the original patent, must be received before this reissue application can be allowed. See 37 CFR 1.178.
4. Claims 4-63 are further objected under 37 CFR 1.173 since these newly added claims have not been underlined as required in 37 CFR 1.173 (b) 2. Further, there is no statement mentioned in the preliminary amendment as to the supports in the original specification for each of the newly added claims 4-63 as required under 37 CFR 1.173(c).

Election/Restrictions

5. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-19, 24-39 and 49 are, drawn to an aircraft maintenance system or a system for transmitting, receiving and storing the aircraft performance and control parameters, classified in class 701, subclass 29.

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- II. Claims 20-23, 50-52 and 62-63 are, drawn to an in-flight advisory system, classified in class 940, subclass 945.
- III. Claims 40-43 are, drawn to an air traffic control system, classified in class 701, subclass 120.
- VI. Claims 44-48 and 53-61 are, drawn to a ground collision avoidance system or an in-flight collision avoidance method, classified in class 701, subclass 301.

The inventions are distinct, each from the other because of the following reasons:

- 6. Inventions I to IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, inventions I to IV are separate usable in their differing modes and not requiring the combinations of other claimed invention. See MPEP § 806.05(d).
- 7. Newly submitted claims 20-23, 40-48 and 50-63 are directed to the inventions that are independent or distinct from the invention originally claimed for the reason set forth above.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 20-23, 40-48 and 50-63 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

- 8. The following office action is directed to claims 1-19, 24-39 and 49 as constructively elected by applicant by original presentation.

Claim Rejections - 35 USC § 112

- 9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 30 and 38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claimed digital data consisting of airspeed of the aircraft, aircraft attitude, engine status of the aircraft, flight control positions, landing gear status and control surface positions as recited in claim 30 and the claimed feature of using a processor to calculate a crash site based upon the performance and control parameters as well as the aircraft position as recited in claim 38 find no support in the original specification as filed.

11. Claims 4-17 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 4 and 15, the preamble of these claims is directed to an aircraft maintenance system. However, there is no recitation in the body of these claims as to how the maintenance of the aircraft is being implemented by the recited structural elements. Further, in claim 15, line 11, the antecedent basis for "said digital data" has not been set forth in the claim. As per claim 5, line 2, "an aircraft" should be "said aircraft" in order to avoid the antecedent basis problem.

As per claim 13, line 2, "provides" should be "provided".

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As per claim 19, the preamble recited therein is misdescriptive since the parent claim 18 is not directed to a method for determining whether to issue an aircraft maintenance advisory as recited.

Claim(s) that have not been specifically indicated is/are rejected for incorporating the above error(s) from its/their parent claim(s) by dependency.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Kuroda et al (patent no. 5381140).

As per claim 18, figure 1 and columns 3-5 and 8 of the Kuroda et al reference clearly disclose the claimed method for real-time monitoring and archiving of aircraft performance data including the steps of providing a performance sensor in an aircraft (see "ADS" data in col. 1, lines 53-60), electronically transmitting the aircraft performance parameter to a global communication network (items 3, 11c and 211) and receiving and archiving the aircraft performance parameter at a ground station (item 22, col. 5, lines 47-49 and col. 8, lines 10112).

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al (patent no. 5381140) in view of Smith et al (patent no. 5931877).

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As per claim 19, it is noted that the claimed steps of analyzing the performance parameter and subsequently transmitting the maintenance advisory based on the analysis to an aircraft has not been disclosed in the Kuroda et al reference. However, such features are well known in the art and clearly taught in figure 1 and column 2 of the Smith et al reference. It would have been obvious for one having ordinary skill in the art to incorporate such well known features as taught in Smith et al into the Kuroda et al method to facilitate the aircraft maintenance and eliminate/reduce the removal of fully functional system components as directly suggested on column 2, lines 42-43 of the Smith et al teaching.

15. Claims 1-5, 9-14, 24 and 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al (patent no. 5931877) in view of Kuroda et al (patent no. 5381140).

As per claims 1-4, 12-13, 24, 28 and 30-35, figure 1 and columns 3-7 of the Smith et al reference clearly disclose an aircraft maintenance system and method as well as a digital data communication system including a maintenance communication means (item 22), a sensor multiplexer receiver and transmitter means (item 12), an aircraft manufacturer's database means (item 20), a central station means (item 16) and a global rf communication network means (items 28 and 30). Further, it would have been readily apparent for one skilled in the art that there must be some sort of processing and display devices included in the central station (item 16) of the Smith et al system in order to provide any data retrieval and analysis functions. The difference between the claimed invention and that disclosed in Smith et al is that the latter does not disclose the features of providing an identifier unique to a particular aircraft and/or a storage for archiving the performance and control parameters transmitted from an aircraft (claims 1-3, 14 and 29). However, such missing features in Smith et al are well known in the art and clearly taught in

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figure 1 (item 22) and col. 4, line 7 of the Kuroda et al teaching. It would have been obvious for one skilled in the art to incorporate such well known features as taught in Kuroda et al into the Smith et al system so that the identity of a particular aircraft can be ascertained and that the transmitted performance and control data can be further analyzed to provide maintenance advisory as directly suggested in the Kuroda et al reference.

As per claims 5 and 9, the additionally claimed flight data recorder is taught in col. 4, lines 37-40 of the Smith et al reference.

As per claims 10 and 11, the claimed gps receiver and inertial navigation system are taught in col. 3, line 60 to col. 4, line 6 of the Kuroda et al reference.

16. Claims 6-8, 15-17 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith et al and Kuroda et al and further in view of Monroe (patent no. 5798458) submitted by applicant.

As per claims 6, 15-17 and 25-26, the claimed limitations have been met by the combined teachings of Smith et al and Kuroda et al for the reasons set forth above with the exception of the "sensor multiplexer" as claimed. However, it is notoriously well known in the art to routinely use a "multiplexer" to sample a plurality of sensor signals in order to reduce the circuit or hardware elements needed. Further, such "multiplexer" is clearly taught in figure 4, item 96 of the Monroe teaching. Hence, it would have been readily apparent for one skilled in the art that such well known "multiplexer" as taught in Monroe either already have been included in the Smith et al and Kuroda et al teachings or would have been obvious to do so in order to eliminate the circuit or hardware elements needed.

As per claims 7-8 and 27, the additionally claimed audio and video information are clearly taught in figure 12 of the Monroe reference. It would have been readily apparent for one skilled in the art to include those information in the Smith et al system in the event that sound and image of the aircraft are required to provide a more detail analysis.

17. Claims 36-39 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al in view of Monroe.

As per claims 36, 39 and 49, figure 1 of the Kuroda et al reference clearly discloses a telemetric data recorder for storing the performance and control parameters (see "ADS" data on columns 1 and 3) transmitted from an aircraft to a central ground based station (item 22, col. 5, lines 47-49 and col. 8, lines 10-12) as well as the method for transmitting and receiving aircraft performance and control parameters. Further, it would have been readily apparent for one skilled in the art that in the event of a crash, the data stored in the storage device in Kuroda et al would have become a "crash data recorder" as claimed. The difference between the claimed invention and that disclosed in Kuroda et al is that the latter does not explicitly disclose the "sensor multiplexer" or "sensor multiplexer receiver" as claimed. However, it is notoriously well known in the art to routinely use s "multiplexer" to sample a plurality of sensor signals to reduce the circuit or hardware elements needed. Further, such "multiplexer" is clearly taught in figure 4, item 96 of the Monroe teaching. Hence, it would have been readily apparent for one skilled in the art that such well known "multiplexer" as taught in Monroe either already have been included in the Kuroda system or would have been obvious to do so in order to eliminate the circuit or hardware elements.

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As per claim 37, the claimed gps receiver is disclosed in col. 3, line 64 of the Kuroda et al reference.

As per claim 38, it would have been obvious for one skilled in the art that the position data obtained in Kuroda et al has to be used to calculate a crash site in an event of a crash.

18. The additional reference(s) is/are cited to show the related system(s). Applicant(s) should consider them carefully when responding to the current office action. References H-M on page 1 of form 892 and A-F on page 2 of form 892 have not been sent along with the current office action since those references should be in applicant's possession as the result of the prosecution in the parent case.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary Chin whose telephone number is (703) 305-9751. The examiner can normally be reached on Monday-Friday 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William A Cuchlinski can be reached on (703) 308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7687 for regular communications and (703) 305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.

July 10, 2003


GARY CHIN
PRIMARY EXAMINER